REMARKS

Applicants thank the Examiner for the detailed office action and the allowance of Claim 44.

In response to Examiner's rejections, two independent claims of this application, Claims 79 and 91, have been amended based on the original specification without adding new matter. In addition, Claims 16 and 31 have been canceled; Claims 32 and 33 have been amended to change their dependence from their prior base Claim 16 to Claim 79. Finally, additional dependent Claims 94-101 have been added for the base Claims 79 and 91 based on the original specification without adding new matter.

Declaration

The Patent Office requires Applicants to submit a new declaration. The new declaration will be submitted at a later time.

Claim Rejections under 35 USC 103(a)

Rejections to pending claims are based on combinations of Someya as the primary reference and some or all of additional references by Kimura, Watanabe, Takuma, Ratna, Gibeau, Okajima, Beeson, Kaplan, Okazaki, Yamagishi, Bottorf, and Johnson. These contentions are, however, respectfully traversed because they fail to meet the requirements under 35 USC 103(a) to support the respective rejections.

Improper Combinations of Prior Art

As an initial matter, the contented combinations of Someya with Kimura, Watanabe, Takuma, Ratna, Gibeau, Okajima, Beeson, Kaplan, Okazaki, Yamagishi, Bottorf or Johnson are improper because the technical nature and optical designs of the Someya systems are significantly different from other systems and such differences render the suggested combinations technically inoperable or defective for the intended purposes as disclosed by

Someya and other references. In this regard, the Office Action fails to provide any explanation as to how the contended combinations would operate without defeating the functions and operations as intended by Someya and other references. Under 35 USC 103(a), such combinations are improper.

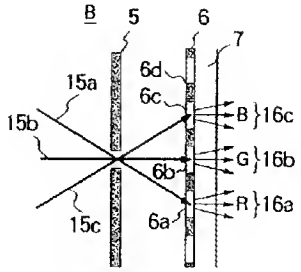
As an example, the Office Action contends that the combination of Someya, Kimura and Watanabe on pages 3 and 4 of the Office Action would disclose Claim 91. The Fresnel lens disclosed in Watanabe is suggested in the Office Action to be combined with the display in Someya in the following manner:

> Watanabe, Fig 1, teaches a rear projection display, similar to that shown in Fig 10 of Someya, with a Fresnel lens (7, Fig 2) to direct light incident to a display screen at different angles to the screen (2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a Fresnel lens as taught by Watanabe to direct light to the fluorescent layer of Someya, in order to change the angle of the light provided to the screen.

This suggested combination clearly destroys the operation of the display system in the primary reference Someya due to the unique deisgns of the Someya system.

In the Someya system, the phosphor coating 6 in FIGS. 1 and 3 comprises red phosphor dots 6a, green phosphor dots 6b, and blue phosphor dots 6c separated by a black matrix 6d. For easy reference, FIG. 3 in Somyya is reproduced below.

FIG. 3



Accordingly, in Someya, the apertures in the aperture mask 5 are positioned so that ultraviolet beam 15a illuminates only red phosphor dots 6a, ultraviolet beam 15b illuminates only green phosphor dots 6b, and ultraviolet beam 15c illuminates only blue phosphor dots 6c. When illuminated, a red phosphor dot 6a emits red light 16a, a green phosphor dot 6b emits green light 16b, and a blue phosphor dot 6c emits blue light 16c. Notably, the images are produced at the phosphor coating 6 in FIGS. 1 and 3. See details at Column 3, lines 34-45 in Someya.

Watanabe describes a projection system that is fundamentally different from the display in Someya. FIG. 1 of Watanabe is reproduce below to show that the images in the Watanabe is formed at the imaging surface of the projector tube 3 and is projected to the viewer via mirror 10 the projection screen 2. Here, the images seen by the viewer are on the imaging surface of the projector tube 3 and are NOT formed on the projection screen 2.

According to the teaching in Watanabe, the function of the projection screen 2 is a projector lens.

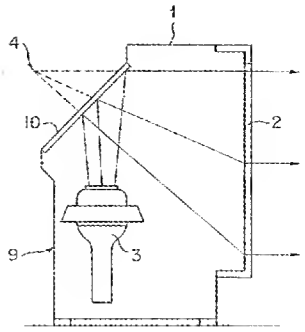


FIG. 1

For easy reference, a part of the description in Watanabe for FIG. 1 is reproduced below.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 shows a rear projection type television set 1 provided with a projection screen 2 of the present invention. The TV set 1 has a casing 9 for supporting the projection screen 2 in the vertical direction. In this casing 9, a projector tube (e.g., CRT) 3 is disposed. To make the TV set 1 compact, the optical axis of the projector tube 3 is determined to be offset from the optical axis of the projection screen 2 at a predetermined angle. That is, the optical axis of the projector tube 3 is set in the vertical direction. Therefore, the projection light outgoing from the projection tube 3 in the vertical direction is reflected by an inner reflection surface of an inclined mirror 10, and then projected onto an inner surface of the projection screen 2 along a downward oblique optical axis as shown.

FIG. 2 in Wanatabe is reproduced below and further shows the projection lens nature of the projection screen 2 where divergent light from the original image point at A on the left is focused to a point B or B' (image formation point) on the right side.

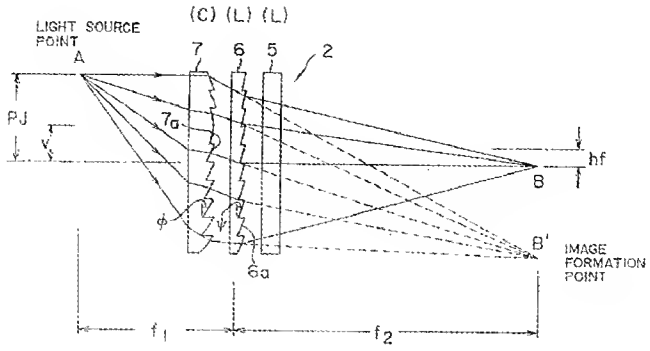


FIG. 2

Based on the teachings in Someya and Watanabe, if the Fresnel lens feature of the projection screen 2 in Watanabe were implemented in the Someya in the way as suggested by the Patent Office, the Fresnel lens feature of the projection screen 2 in Watanabe would destroy the color separation function of the aperture mask 5 shown in FIGS. 1 and 3 of the Someya and thus renders the Someya system completely inoperational.

Therefore, under 35 USC 103(a), such the suggested combination of Someya, Kimura and Watanabe on pages 3 and 4 of the Office Action are improper for completely disregarding the differences in technologies of the different parts in these references.

In fact, the unique design of the Someya display *teaches away* the suggested combination made in the Office Action.

The above analysis demonstrates that, the suggested combination of Someya, Kimura and Watanabe on pages 3 and 4 of the Office Action lack basis in the individual references by Someya, Kimura and Watanabe. A person of ordinary skilled in the art would not make the suggested combination because the suggested combination does not make technical sense and completely disregards the differences, nature and operations of the different technologies described in these references as well known to a person of ordinary skilled in the art.

The suggested combination appears to be made solely based on impermissible hindsight from the teaching in Claim 91 under the rejection.

For at least above reasons, Applicants respectfully submit that the suggested combination of Someya, Kimura and Watanabe and other combinations are improper and contradict the disclosures of the references. Therefore, the rejections based on such combinations are improper and must be withdrawn.

Rejection to Claim 91 Lacks Support in Cited References

For sake of argument, let's now disregard improper combination of the suggested combination of Someya, Kimura and Watanabe on pages 3 and 4 of the Office Action and consider whether the combined teaching as suggested in the Office Action discloses Claim 91. Our analysis shows that the suggested combination of Someya, Kimura and Watanabe fails to do so as required under 35 USC 103(a). Therefore, for this reason alone, Claim 91 as presented in this paper is patentable.

First, Claim 91 as presented in this paper recites a Fresnel lens formed on the first side of the fluorescent layer to direct the excitation light incident to the display screen at different angles at different locations to enter the fluorescent layer with entry directions being approximately normal to the fluorescent layer. As discussed above, the suggested combination of Someya, Kimura and Watanabe relies on Watanabe to provide the teaching of this feature in Claim 91. In Watanabe, the Fresnel lens-based projection screen 2 is an imaging lens and hence is very different from the Fresnel lens recited in Claim 91. Nothing in Wtanabe teaches a Fresnel lens formed on the first side of the fluorescent layer to direct the excitation light incident to the display screen at different angles at different locations to enter the fluorescent layer with entry directions being approximately normal to the fluorescent layer. The imaging nature of the Fresnel lens-based projection screen 2 in Watanabe has nothing related to "entry directions being approximately normal to the fluorescent layer" as recited in Claim 91.

Second, Claim 91 recites that the Fresnel lens is located between the first layer and the fluorescent layer. The suggested combination of Someya, Kimura and Watanabe is completely silent on this feature.

Third, Claim 91 recites that the first layer comprises a composite sheet of a plurality of dielectric layers that are coextruded to have alternating high and low refractive indices to form an optical interference filter. Kimura fails to disclose this aspect of Claim 91 while Someya and Watanabe are completely silent on this.

Fourth, Claim 91 recites each laser beam carrying optical pulses that carry information of different colors on a colored image to be generated by the emitted visible light of different colors by the fluorescent layer. Someya fails to disclose this aspect of Claim 91 and teaches a completely different design where each beam is designated to carry image information of a single color. Referring to FIGS. 1 and 3 in Someya, the text in Someya in Column 3, lines 34-45 is quoted below:

> *FIG. 3 illustrates the detailed structure and operation of the aperture mask 5 and the phosphor coating 6 on the transparent screen 7. The phosphor coating 6 comprises red phosphor dots 6a, green phosphor dots 6b, and blue phosphor dots 6c separated by a black matrix 6d. The apertures in the aperture mask 5 are positioned so that ultraviolet beam 15a illuminates only red phosphor dots 6a, ultraviolet beam 15b illuminates only green phosphor dots 6b, and ultraviolet beam 15c illuminates only blue phosphor dots 6c. When illuminated, a red phosphor dot 6a emits red light 16a, a green phosphor dot 6b emits green light 16b, and a blue phosphor dot 6c emits blue light 16c.*

Fifth, Claim 91 recites an optical sensing unit positioned to receive a portion of light from the screen that is "*different in wavelength from the excitation light of the laser beams*" (emphasis added). Some examples for implementations of this feature of Claim 91 are provided in FIGS. 14, 14A, 15 and 20A of the original specification.

In contrast, Someya teaches a very different sensing mechanism based on one or more UV sensors that detect the light at the same wavelength as the excitation light to the screen (Col. 3, lines 46-59):

> An ultraviolet sensor (not visible in FIG. **1**) is disposed between the scanning mechanism **4** and the screen assembly **8**, at a point that does not interfere with the display. When the ultraviolet beams **15***a*, **15***b*, and **15***c* illuminate this sensor, a signal is returned to the controller **9**, which thereby learns the position of the beams. This signal enables the controller **9** to synchronize the operation of the scanning mechanism **4** with the red, green, and blue video signals supplied to the acousto-optic modulators **3**. This ultraviolet sensor is similar to a well-known sensor used for a similar purpose in laser printers.
>
> If necessary, a plurality of ultraviolet sensors can be provided. Separate sensors can be provided for horizontal scanning and vertical scanning, for example.

Therefore, Someya fails to provide the teaching alleged in the Office Action.

In view of the above, the suggested combination of Someya, Kimura and Watanabe on pages 3 and 4 of the Office Action fails to disclose multiple features in Claim 91 as presented in this paper. Under 35 USC 103(a), Claim 91 is patentable.

Rejections to Other Claims

Rejections to other claims based on Someya and other references fail to meet the requirements under 35 USC 103(a) based on the above and based on merits of these claims.

Claims 94-101 Are Patentable

Newly added Claims 94-101 are patentable based on the above analysis and based on the merits of these claims.

Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

This response is filed timely with an extension of time for three months. Please charge any applicable fee for the extension of time and any other charges or credits to our Deposit Account No. 50-5252, under Order No. 09063-8002.US03 from which the undersigned is authorized to draw.

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Respectfully submitted,

By /Bing Ai/
Bing Ai
Registration No.: 43,312
PERKINS COIE LLP
P.O. Box 1247
Seattle, Washington 98111-1247
(858) 720-5700
(858) 720-5799 (Fax)